



Contoured frequency by altitude diagrams, or CFADs, (Yuter and Houze, 1995, *Mon. Wea. Rev.*, 123, 1941-1963) produced from profiles of Doppler vertical velocity (DVV;  $\text{m s}^{-1}$ ) and equivalent radar reflectivity factor (dBZE) collected in rain with the NOAA/ETL S-band radar at Cazadero, California during CALJET (January through March 1998). The colored contours display the frequency of occurrence relative to the total number observations available at a particular height. The DVV CFAD bin size is  $0.5 \text{ m s}^{-1}$  and the radar reflectivity bin size is 3 dBZe. Panels (a) and (b) are for bright-band (BB) rain. Individual 90-s profiles from 30-min segments were included in the CFADs if at least 80% of the profiles collected in each segment contained a bright band. The height of each BB rain profile was adjusted in 105-m increments so that the bright band occurred at the range-gate height closest to the average bright-band height (BBH) for the entire winter season (indicated by the white lines). Panels (d) and (e) are for non-bright-band (NBB) rain and were derived similarly from half-hour periods when at least 80% of the profiles did not contain a bright-band. The average BBH for panels (d) and (e) was inferred from bright-band rain profiles, when available, recorded immediately before or after the NBB rain period. Roughly 2% of the profiles obtained in heavier rain events were excluded from the BB CFADs in order to produce the same average rain rate ( $3.95 \text{ mm hr}^{-1}$ ). Panels (c) and (f) show the percentage of profiles available at each range gate relative to the total number of profiles listed for BB rain and NBB rain, respectively. The NBB CFADs are shown for all range gates where the relative frequency exceeds 60%. The reduced relative frequency evident in the lower portion of panel (c) is caused by the height adjustment applied to the BB CFADs.